REMARKS

In sections 1-6 of the Office Action, the Examiner re-imposed the restriction requirement that the Examiner imposed by telephone. According to the Examiner, claims 1-18 are drawn to a tuner and claims 19-37 are drawing to a tuning method.

Applicants again traverse this restriction requirement because the tuner of claims 1-18 and the tuning method of claims 19-37 are essentially the same invention differing primarily in scope because one recites apparatus and the other does not.

Thus, claim 1 is directed to a tuner in which (a) a signal level controller attenuates a signal from an RF input, (b) a feedback amplifier provides first and second outputs representing power of the attenuated signal, (c) a mixer mixes at least one of the outputs of the amplifier with a local oscillator signal, and (d) a feedback controls the attenuation provided by the signal level controller in response to the power of the attenuated signal.

Claim 19 is directed to a tuning method in which (i) an RF signal received at an RF input is attenuated, (ii) the attenuated signal is mixed with a local oscillator signal to produce an intermediate

frequency signal, (iii) a signal representing the power of the attenuated signal is developed, and (iv) the attenuation of the RF signal is controlled in response to the signal representing the power of the attenuated signal so as to inhibit overloading of the mixer.

As can be seen, item (a) of claim 1 is nearly the same as item (i) of claim 19 differing primarily in that item (a) of claim 1 adds an apparatus to perform the function, item (b) of claim 1 is nearly the same as item (iii) of claim 19 differing primarily in that item (b) of claim 1 adds an apparatus to perform the function, item (c) of claim 1 is nearly the same as item (ii) of claim 19 differing primarily in that item (c) of claim 1 adds an apparatus to perform the function, and item (d) of claim 1 is nearly the same as item (iv) of claim 19 differing primarily in that item (d) of claim 1 adds an apparatus to perform the function.

Therefore, claims 1-18 and 19-35 are not combination and sub-combination. Therefore, the Examiner is respectfully requested to withdraw the restriction requirement.

In sections 7 and 8 of the Office Action, the Examiner rejected claim 22 under 35 U.S.C. §112, second

paragraph, as being indefinite. Claim 22 has been amended to overcome the rejection.

In sections 9 and 10 of the Office Action, the Examiner rejected independent claim 19 and dependent claims 22, 23, 28, 35, and 37 under 35 U.S.C. §102(b) as being anticipated by Zuckerman.

Zuckerman shows in Figure 4 a typical cordless phone having a controller 50 that controls a receive function (basically the upper half of Figure 4) and a transmit function (basically the lower half of Figure 4). The signal from the antenna 20 is amplified by an RF amplifier 24 and then filtered by a band-pass filter 26. A mixer 28 mixes a 33.8 MHz signal from a VCO 46 with the filtered signal to produce sum and difference signals. A band-pass filter 30 selects the sum signal or the difference signal depending on which is closer in frequency to a first intermediate frequency, and passes the selected signal to an IF amplifier 32. A second mixer 34 mixes a 10.24 MHz reference signal with the output of the IF amplifier 32 to produce a second intermediate frequency.

A band pass filter 36 rejects unwanted signals, a high gain IF amplifier 38 amplifies the output of the band pass filter 36, and a demodulator 42 delivers a

voltage which is proportional to the frequency of the IF signal. This voltage is amplified by an audio amplifier 44 and applied to the earpiece of the telephone.

Independent claim 19 is directed to a tuning method according to which an RF signal received at an RF input is attenuated, the attenuated signal is mixed with a local oscillator signal to produce an intermediate frequency signal, a signal representing the power of the attenuated signal is developed, and attenuation of the RF signal is controlled in response to the signal representing the power of the attenuated signal so as to inhibit overloading of the mixer.

Zuckerman fails to disclose at least two features of independent claim 19.

First, Zuckerman fails to disclose developing a signal representing the power of the attenuated signal. According to the Examiner, this feature is provided by the IF amplifier 32 of Zuckerman. However, Zuckerman states nowhere that the IF amplifier develops signal representing power. Indeed, the only mention of the intermediate frequency amplifier 32 is in the following passage from Zuckerman: "Band-pass filter 30 selects signals close in frequency to 10.7 MHz (first intermediate frequency) from the output of mixer 28 in

favor of the sum frequency band, and passes the signal to intermediate frequency amp 32."

As can be seen, there is no mention here or elsewhere in Zuckerman that the IF amplifier 32 develops a power signal. There are references in Zuckerman to reducing the amount of transmitter signal power reaching the receiver. However, there is no mention of developing a signal representing power.

Accordingly, because Zuckerman fails to disclose developing a signal representing power, independent claim 19 is not anticipated by Zuckerman.

Second, there is no disclosure in Zuckerman that attenuation of the received RF signal is controlled in response to the signal representing power. The Examiner asserts that this function is disclosed in column 9, lines 19-21. This portion of Zuckerman states that "[t]he key consideration is that this remaining transmit signal be low enough in level that it does not overload mixer 28 or successive receiver stages and prevent same from processing the weakest useful receive signal." However, this statement says nothing about controlling attenuation in response to a power signal.

Accordingly, because Zuckerman fails to disclose controlling attenuation in response to a power

signal, independent claim 19 is not anticipated by Zuckerman.

Because independent claim 19 is not anticipated by Zuckerman, dependent claims 22, 23, 28, 35, and 37 are likewise not anticipated by Zuckerman.

In sections 11 and 12 of the Office Action, the Examiner rejected claim 36 under 35 U.S.C. §103(a) as being unpatentable over Zuckerman in view of Muterspaugh.

Muterspaugh describes a low noise block converter that is used in a receiving system having a dish-like receiving antenna. The low noise block converter contains, in order, an input port coupled to the antenna, a first RF input bandpass filter (shown as a pair of parallel coupled bandpass filters), a gain controlled RF amplifier, a second RF input bandpass filter, a mixer 110 supplied with a signal from a local oscillator, a RF output filter 114, a RF output amplifier 116, and a gain control signal generator 146.

The first RF input bandpass filter passes RF signals in the 2150 to 2162 MHz band and in the 2500 to 2686 MHz band. The gain controlled RF amplifier provides a maximum gain of about 15 dB and controllably decreases that gain in response to a voltage gain control signal produced by an automatic gain control (AGC) signal

generator that includes an AGC detector and an AGC signal processor. The AGC detector comprises a conventional diode detector. The AGC detector rectifies the output RF signal from the output amplifier and applies the rectified signal to the AGC signal processor.

The AGC signal processor comprises a DC amplifier. The rectified signal generated by AGC detector is applied to a first input of the DC amplifier, and a threshold voltage is applied to a second input of the DC amplifier. The DC amplifier provides a maximum output signal until the rectified signal exceeds the threshold voltage at which point the output signal of the DC amplifier decreases as the rectified signal increases.

The output signal of the DC amplifier is the gain control signal provided to the gain controlled RF amplifier. Thus, as the rectified signal increases above the threshold voltage, the gain control signal decreases in magnitude.

As can be seen, Muterspaugh also fails to disclose developing a signal representing power and controlling attenuation in response to a power signal. Accordingly, independent claim 19 is not unpatentable over a combination of Zuckerman and Muterspaugh.

Because independent claim 19 is not unpatentable over a combination of Zuckerman and Muterspaugh, dependent claim 36 is likewise not unpatentable over a combination of Zuckerman and Muterspaugh.

CONCLUSION

In view of the above, it is clear that the claims of the present application patentably distinguish over the art applied by the Examiner. Accordingly, allowance of these claims and issuance of the above captioned patent application are respectfully requested.

Respectfully submitted,

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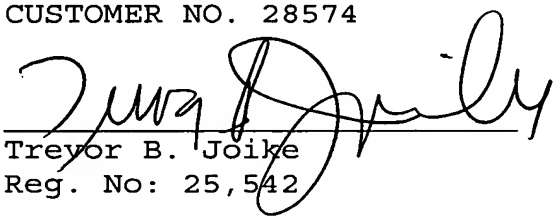
By: 
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